



*All sections must be addressed, or the application will be considered invalid*



A. Applicant Name:

Mailing Address:

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_ E-mail: \_\_\_\_\_

B. Contact Person (if different than applicant):

Address:

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_ E-mail: \_\_\_\_\_

C. Landowner and/or Lessee Name  
(if different than applicant):

Mailing Address:

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_ E-mail: \_\_\_\_\_

A. Project Name:

River, stream, or lake:

Location:    Township:                      Range:                      Section:

Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_ *Within project (decimal degrees)*

County:

B. Purpose of Project:

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C. Brief Project Description (attach additional information to end of application):

D. What was the cause of habitat degradation and how will the project correct the cause?

- E. Length of stream or size of lake that will be treated (project extent): \_\_\_\_\_  
 Length/size of impact, if larger than project extent (e.g., stream miles opened): \_\_\_\_\_
- F. Project Budget Summary:
- |  |           |       |
|--|-----------|-------|
| <b>Grant Request (Dollars):</b>  | <b>\$</b> | _____ |
| Matching Dollars:  | <b>\$</b> | _____ |
| Matching In-Kind Services:*  | <b>\$</b> | _____ |
| <i>*salaries of government employees are not considered matching contributions</i> |           |       |
| Other Contributions (not part of this app)   | <b>\$</b> | _____ |
| <b>Total Project Cost:</b>   | <b>\$</b> | _____ |
- G. Attach itemized (line item) budget – see *budget template*
- H. Attach project location map(s) that include:
- ☐ Extent of the project, including context (relation to major landmark or town)
  - ☐ Indication of public and private property
  - ☐ Riparian buffer locations and widths (if applicable) and grazing locations
- I. Attach project plans:
- ☐ Detailed sketches or plan views with the location and proposed restoration
  - ☐ Pre-project photographs (GPS location strongly recommended)
  - ☐ If water leasing or water salvage is involved, attach a supplemental questionnaire (<https://myfwp.mt.gov/getRepositoryFile?objectID=36110>)
- J. Attach letters or statements of support (e.g., landowner consent, community or public support, and fish biologist support). List any other project partners:
- 

### III. MAINTENANCE AND MONITORING (attach additional information to end of application):

- A. A 20-year maintenance commitment is required\*. Please confirm that you will ensure this protection and describe your approach. Attach any relevant maintenance plans. Yes ☐ No ☐  
*\*If it is a water leasing project, describe the length of the agreement.*

- B. Will grazing be part of or adjacent to the project? If so, describe or attach land management plans, including short term and long term grazing regimes. If the landowner is not the applicant, please describe their involvement in the project. *If you want assistance with grazing plan development, note your need.*

- C. Will the project be monitored to determine if goals were met? If so, what are the short-term and long-term plans to assess benefits and lessons learned? Were pre-project data collected? Will monitoring information be shared with FWP?

**IV. PROJECT BENEFITS** (attach additional information to end of application):

- A. What species of fish will benefit from this project?

- B. How will the project protect or enhance wild fish habitat?

- C. What is the expected improvement to fish populations, both short term and long term? How might the project translate to angler success?

- D. Will the project increase public fishing opportunity for wild fish and, if so, how? Is public fishing allowed onsite? If not, describe how the public would access the project benefits.

The landowner at the Shaw Diversion (Barrick) currently allows both hunting and fishing on the Candlestick Ranch. Expected increases in brown trout abundance will likely provide improved fishing opportunity near the project and for miles downstream.

Improved public fishing opportunity will be most apparent within the project area where Barrick freely provides access to anglers, and to a lesser extent, improved fishing opportunity may be experienced by nearby Jefferson River anglers due to increased brown trout recruitment.

- E. Aside from angling, what local or large-scale public benefits will be realized from this project?

The agricultural operation has been irrigated with flood and wheel line techniques for decades. The screened pumps and pivots should improve crop yield and reduce manpower. Maintenance on screened pumps will be significantly less than the maintenance needed to operate 3 failing diversions. This project is a great example of improving fish habitat while also benefiting local landowners and agricultural operations.

- F. Will the project interfere with water or property rights of adjacent landowners? (explain):

Other related projects will eventually involve a water right change at Jefferson Slough. This will be completed through DNRC water right change process, outside the scope of this project.

- G. Will the project result in the development of commercial recreational use on the site (including paid access)? Explain:

NO.

- H. Is this project associated with the reclamation of past mining activity?

NO.

**Each approved project applicant must enter into a written agreement with Montana Fish, Wildlife & Parks specifying terms and duration of the project. The applicant must obtain all applicable permits prior to project construction. A competitive bid process must be followed when using State funds.**

#### V. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature: \_\_\_\_\_

Date: 5/10/22

**Submittal: Applications must be signed and received on or before November 15 and May 15 to be considered for the subsequent funding period.** Late or incomplete applications will be rejected.

Mail to: FWP Future Fisheries  
Fish Habitat Bureau  
PO Box 200701  
Helena, MT 59620-0701

Email: Future Fisheries Coordinator  
[FWPFFIP@mt.gov](mailto:FWPFFIP@mt.gov)  
(electronic submissions must be signed)  
For files over 10MB, use <https://transfer.mt.gov> and send to [mmcgree@mt.gov](mailto:mmcgree@mt.gov)

North Boulder fish passage  
**BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS**

020-2022

Both tables must be completed or the application will be returned

PROJECT COSTS					CONTRIBUTIONS			
WORK ITEMS (Itemize by Category)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	FUTURE FISHERIES REQUEST	MATCH (Cash or Services)**	OTHER (Not part of this application)	TOTAL
<b>Personnel***</b>								
Survey				\$ -				\$ -
Design	1		\$15,000.00	\$ 15,000.00		15,000.00		\$ 15,000.00
Engineering				\$ -				\$ -
Permitting				\$ -				\$ -
Oversight				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$ 15,000.00	\$ -	\$ 15,000.00	\$ -	\$ 15,000.00
<b>Travel</b>								
Mileage				\$ -				\$ -
Per diem				\$ -				\$ -
			Sub-Total	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Construction Materials****</b>								
GRADE CONTROL ROCK	200	CY	\$200.00	\$ 40,000.00		40,000.00		\$ 40,000.00
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$ 40,000.00	\$ -	\$ 40,000.00	\$ -	\$ 40,000.00
<b>Equipment, Labor, and Mobilization</b>								
MOBILIZATION	1		\$10,000.00	\$ 10,000.00		10,000.00		\$ 10,000.00
INSTALL GRADE CONTROL	300	CY	\$120.00	\$ 36,000.00		36,000.00		\$ 36,000.00
WILLOW AND WOODY DEBRIS MATRIX	1200	LF	\$26.00	\$ 31,200.00	10,000.00	21,200.00		\$ 31,200.00
REMOVE CONCRETE STRUCTURES HAUL OFFSITE	2		\$10,000.00	\$ 20,000.00		20,000.00		\$ 20,000.00

North Boulder fish passage  
**BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS**

020-2022

IRRIGATION PLUGS AND WETLAND	2		\$10,000.00	\$ 20,000.00	10,000.00	10,000.00		\$ 20,000.00
CLEAN SILT BEHIND DIVERSION	3000	CY	\$7.00	\$ 21,000.00	11,000.00	10,000.00		\$ 21,000.00
OFF SITE * CONCRETE DISPOSAL	100	CY	\$120.00	\$ 12,000.00		12,000.00		\$ 12,000.00
Stockwater System	1		\$19,000.00	\$ 19,000.00	10,000.00	9,000.00		\$ 19,000.00
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$ 169,200.00	\$ 41,000.00	\$ 128,200.00	\$ -	\$ 169,200.00
			<b>TOTALS</b>	\$ 224,200.00	\$ 41,000.00	\$ 183,200.00	\$ -	\$ 224,200.00

**OTHER REQUIREMENTS:**

**All of the columns in the budget table and the matching contribution table MUST be completed appropriately or the application will be invalid.** Please see the example budget sheet for additional clarification.

\*Units = feet, hours, inches, etc. Do not use lump sum unless there is no other way to describe the costs.

\*\*Can include in-kind materials. Justification for in-kind labor (e.g. hourly rates used). Do not use government salaries as match. Describe here or in text.

\*\*\*The Review Panel suggests that design and oversight costs associated with a proposed project not exceed 15% of the total project budget. If design and oversight costs are in excess of 15%, applications must include a justification or minimum of two competitive bids for the cost of undertaking the project.

\*\*\*\*The Review Panel recommends a maximum fencing cost of \$1.50 per foot. Additional costs may be the responsibility of the applicant and/or partners.

**Additional details: \* Off Site Grade Control Rock may not be needed depending on material availability. \* Off Site concrete disposal may not be needed depending on disposal site availability.**

**APPLICATION MATCHING CONTRIBUTIONS**

(do not include requested funds or contributions not associated with the application)

CONTRIBUTOR	IN-KIND	CASH	TOTAL	Secured? (Y/N)
MT Trout Unlimited	\$ -	\$ 15,000.00	\$ 15,000.00	Y
Barrick (GSM)	\$ -	\$ 50,000.00	\$ 50,000.00	Y
ARPA	\$ -	\$ 118,200.00	\$ 118,200.00	N
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	

North Boulder fish passage  
**BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS**

020-2022

<b>TOTALS</b>	\$	-	\$	183,200.00	\$	183,200.00	
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<b>OTHER CONTRIBUTIONS</b>						
(contributions not associated with the application)						
CONTRIBUTOR	IN-KIND		CASH		TOTAL	Secured? (Y/N)
	\$	-	\$	-	\$ -	
	\$	-	\$	-	\$ -	
	\$	-	\$	-	\$ -	
	\$	-	\$	-	\$ -	
	\$	-	\$	-	\$ -	
	\$	-	\$	-	\$ -	
	\$	-	\$	-	\$ -	
	\$	-	\$	-	\$ -	
<b>TOTALS</b>	\$	-	\$	-	\$ -	



## Boulder River FFIP Attachments



Figure 1. Shaw Diversion, with the boards removed (top) and in place during irrigation season (bottom). The approximate photo location is 45.88379, -111.94211.



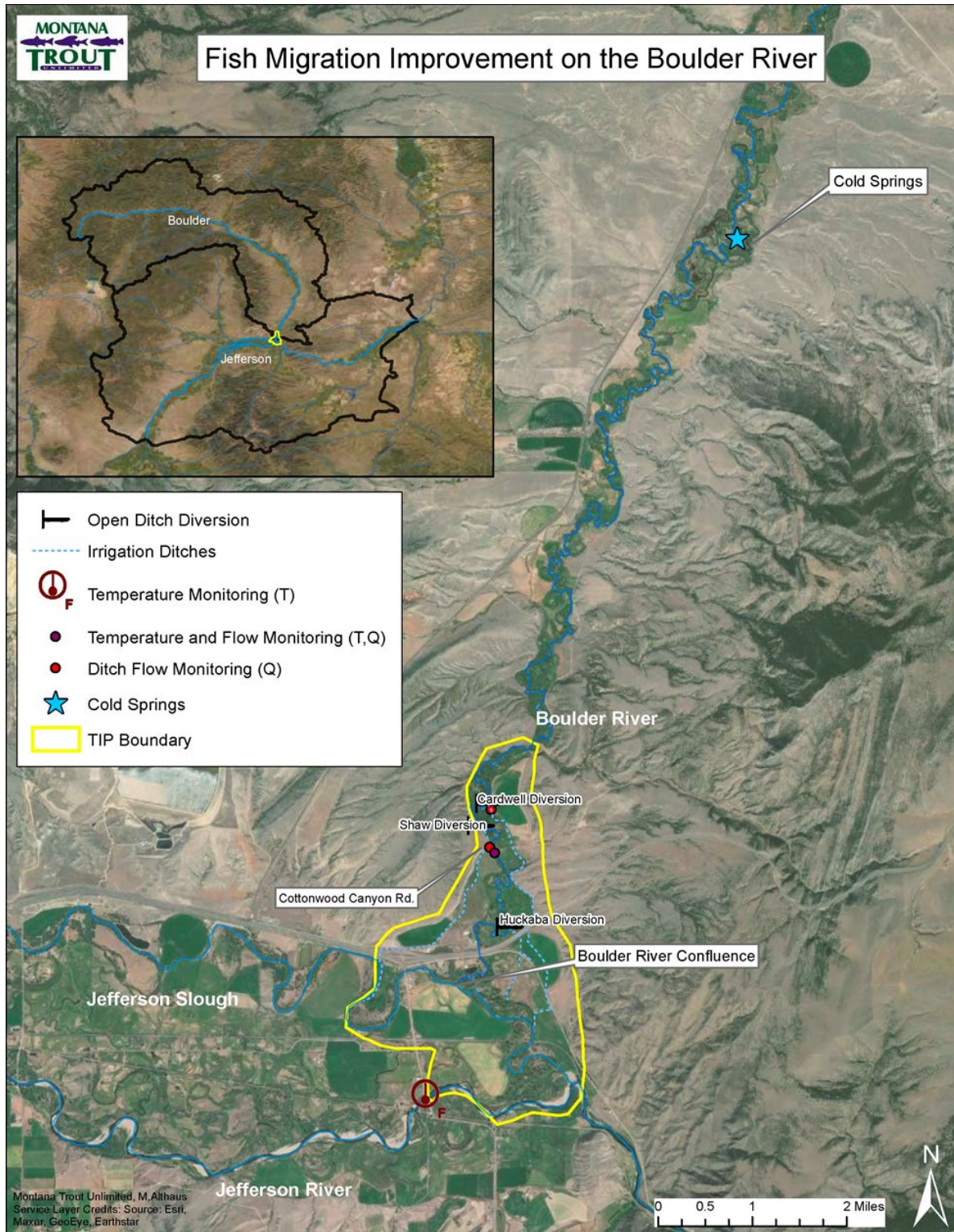


Figure 2. Map of the project area, showing the monitoring stations, irrigation diversions, and irrigation ditches. The yellow line marks the NRCS Targeted Implementation Plan (TIP) focus area. Significant Brown Trout spawning occurs below Cold Springs, approximately 9 miles upstream of Shaw Diversion.



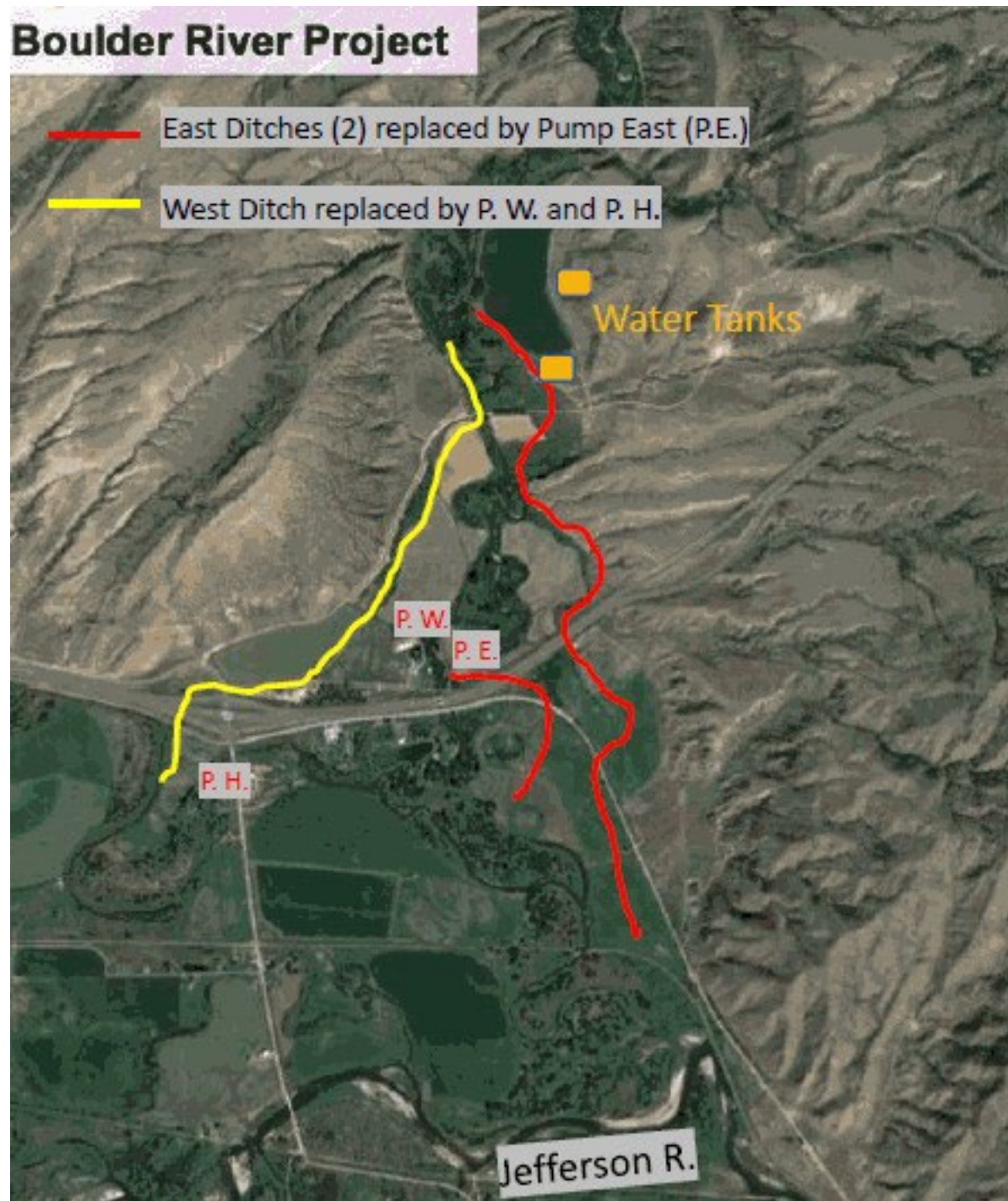


Figure 3. Map of Lower Boulder River showing three existing open ditches (red: east of river and yellow: west of river). Approximate location of three proposed pump sites: "P.E." will serve irrigated acres on east side, "P.W" will serve irrigated acres on west side, and "P.H." will serve the Huckaba Ranch using Jefferson Slough water. Approximate location of off-stream livestock water tanks included.

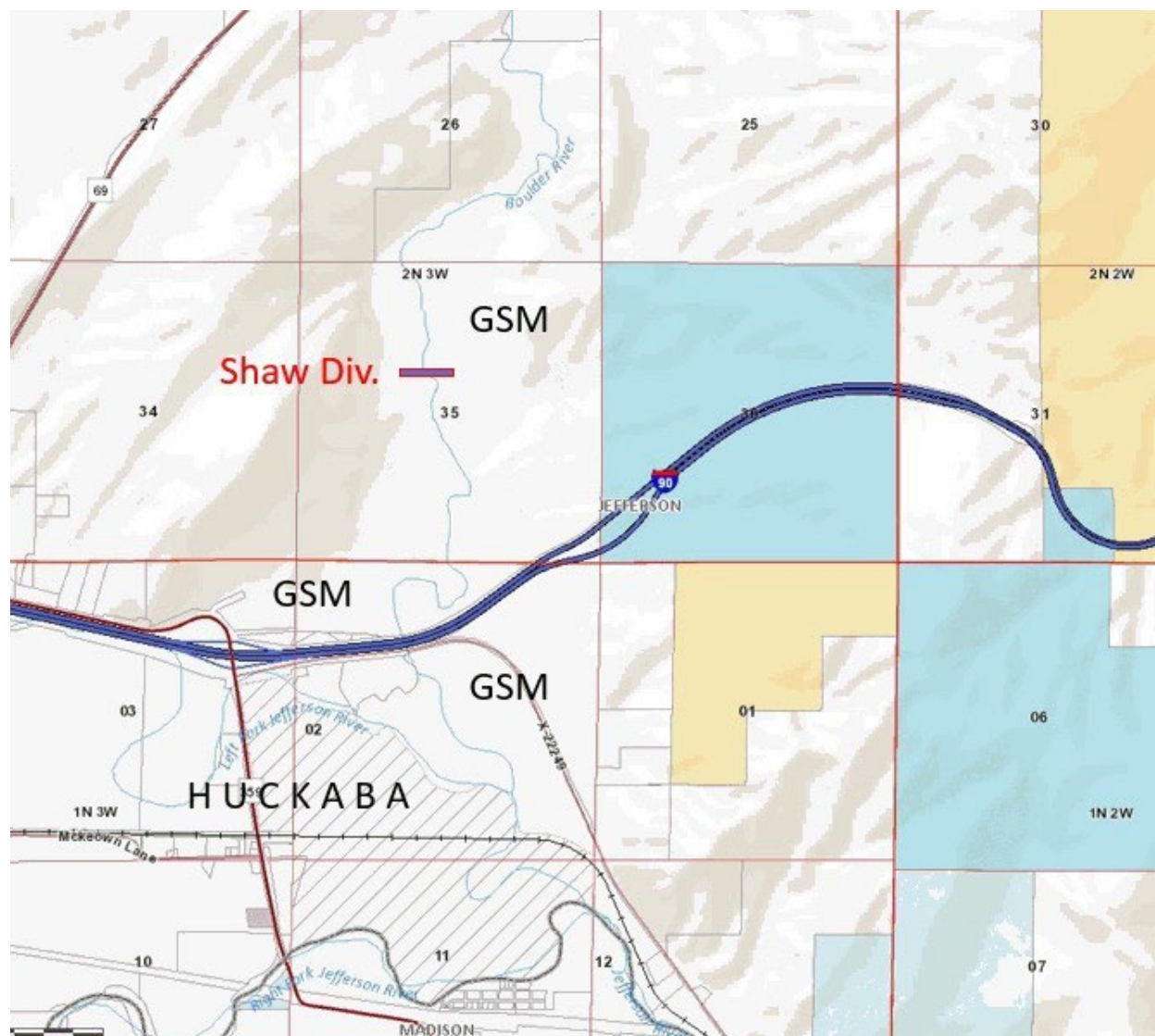


Figure 4. Land ownership map of the project area. State land (blue) and BLM land (yellow) are not located in immediate project area. Golden Sunlight Mine (GSM) and Huckaba Ranch land ownership is generally identified, and no other private holding are located in the project area .





Figure 5. Conceptual Design of Shaw Diversion Removal including the installation of grade control, wetland creation, and brush matrix restoration. Livestock grazing will be restricted for at least 3 years following project completion.

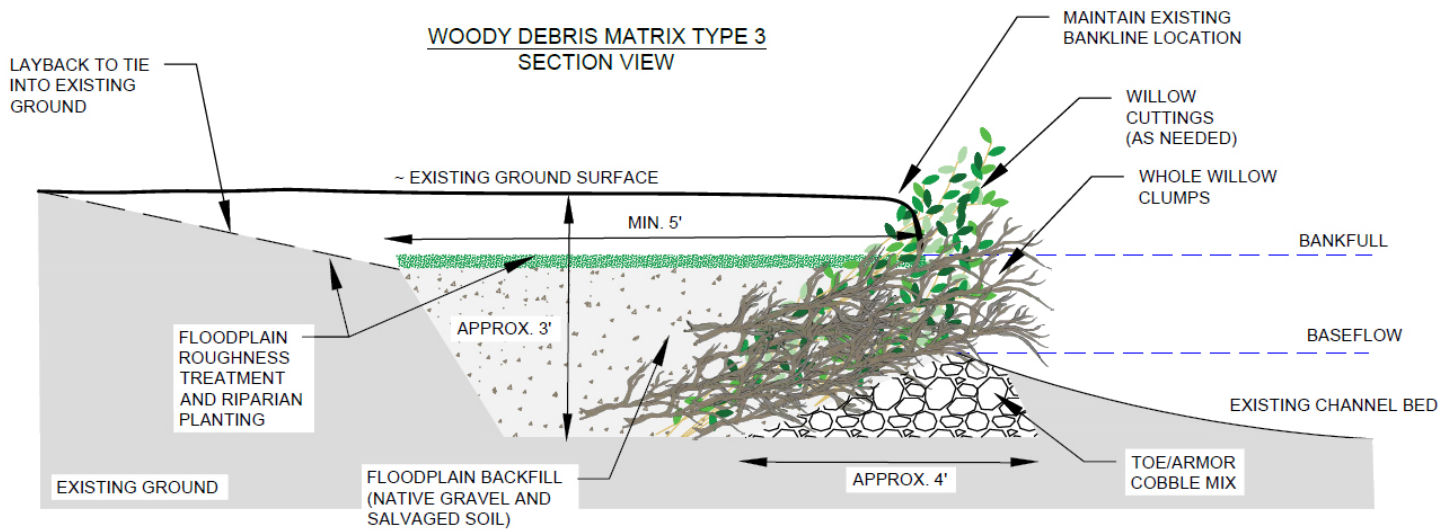


Figure 6. Typical of brush matrix installation.

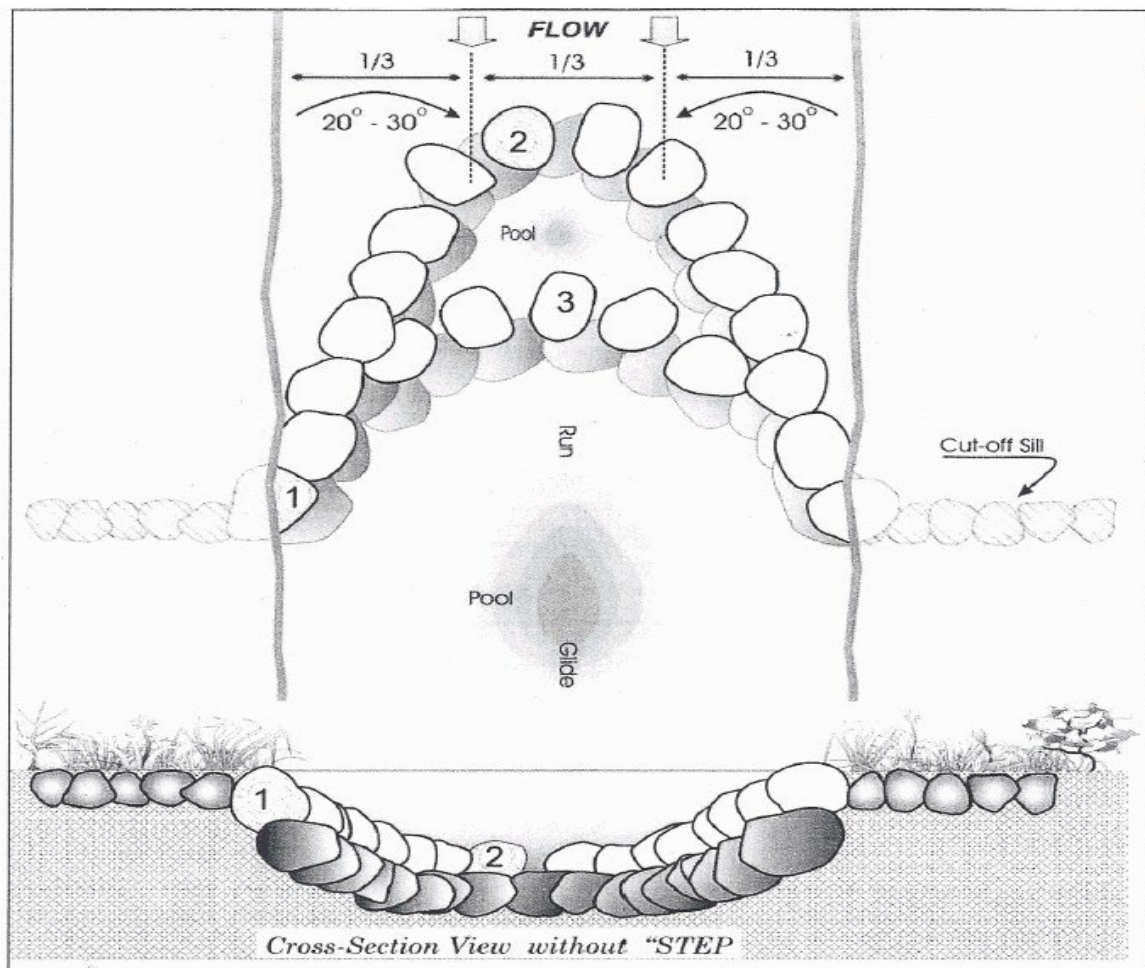


Figure 7. Typical of rock weir grade control.

**Project Monitoring:** Figures 8,9, and 10 and Tables 1 and 2 provide pre-project information that may be useful to consider in future monitoring. Successful project implementation would increase Brown Trout abundance below Shaw Diversion (Figure 8), increase Boulder River streamflow (Figure 9), increase Brown Trout redd counts (Table 1), and document the absence of fish entrainment at pump sites compared to open ditches (Table 2).

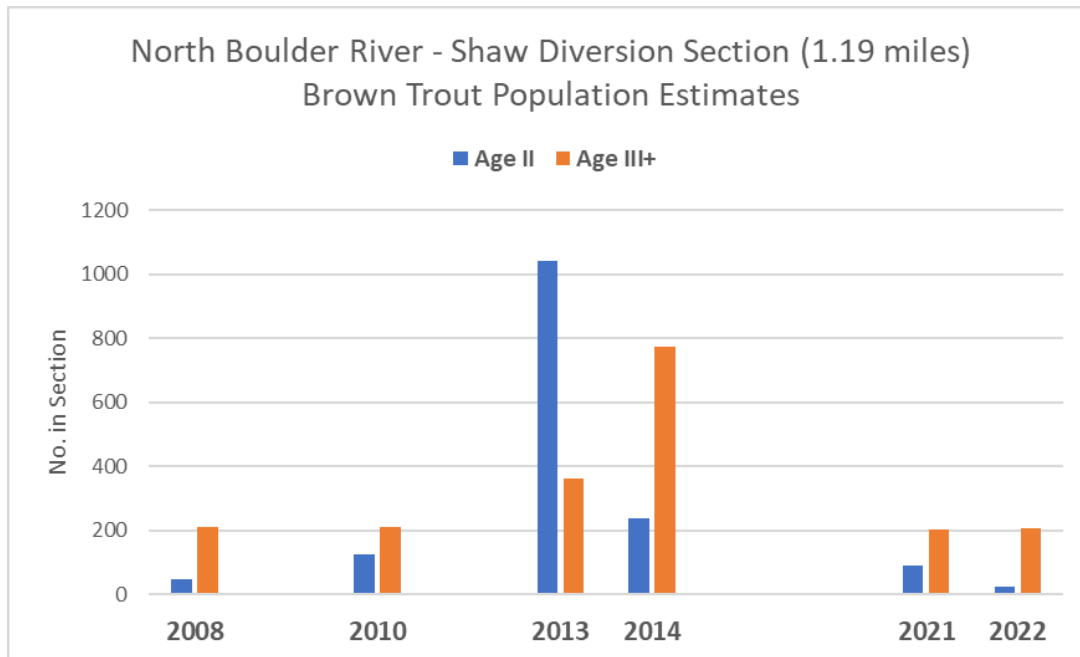


Figure 8. Brown Trout population estimates below Shaw Diversion between 2008-2022.

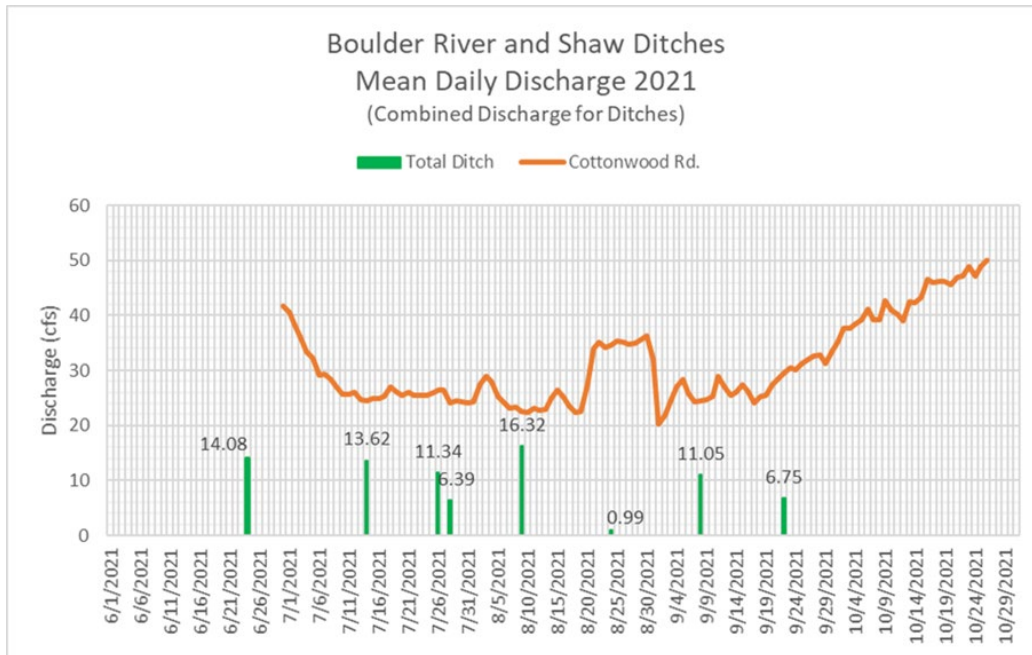


Figure 9. Boulder River discharge at Cottowood Road and combined withdrawals of Shaw and Eastside ditch (green bars) in 2021. Note late August flow improvement during ditch shut down.

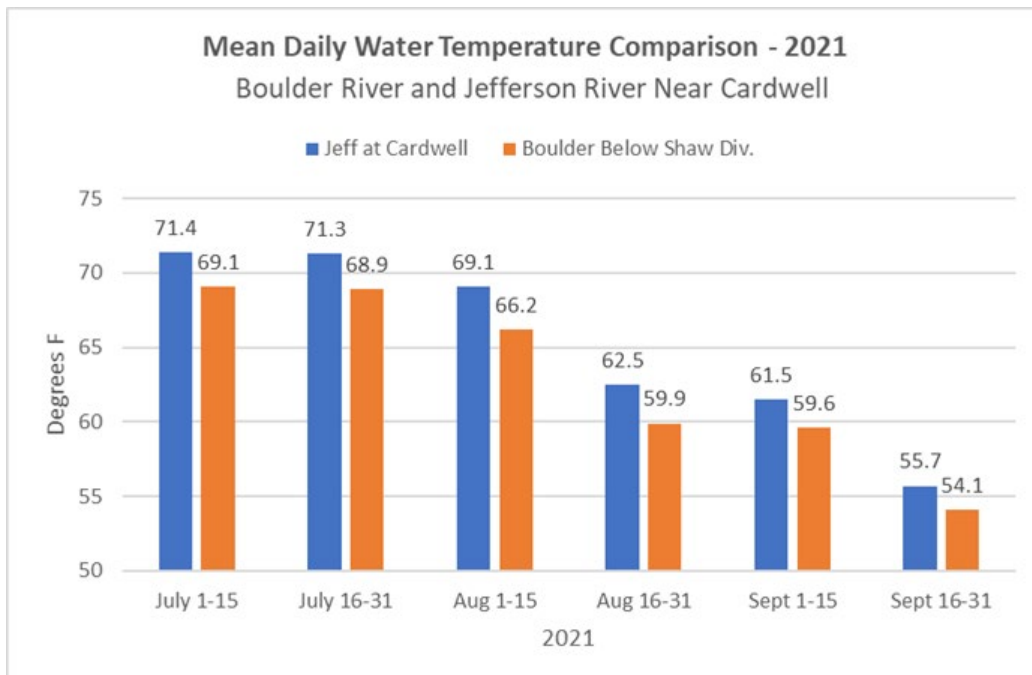


Figure 10. Summer water temperature in the project area (2021). Boulder River water temperature was generally at least 2 F cooler than the Jefferson River.



Table 1. Brown Trout redd counts in a 1.56 mile reach of the Boulder River downstream of Cold Springs, 2001-21. Cold Springs is a Brown Trout spawning destination located 9.1 miles above Shaw Diversion. The redd density immediately below Cold Springs (0.71 mile reach) is higher than downstream reaches. See Figure 2 for location of Cold Springs relative to Shaw Diversion.

<b>Cold Springs to Downstream 0.71 Miles</b>		
Year	Total Redds	Redds per Mile
2001	101	142
2002	110	155
2007	80	113
2018	92	130
2019	102	144
2020	180	254
2021	137	193
<b>0.71 Miles Below Cold Springs to Gavin Bridge (0.85 Mile Reach)</b>		
Year	Total Redds	Redds per Mile
2001	79	93
2002	42	49
2007	30	35
2018	18	21
2019	35	41
2020	36	42
2021	34	40

Table 2. Observations of fish entrainment in Boulder River ditches.

<b>Fish Rescue Observations at Boulder River Irrigation Ditches</b>
Although no systematic fishery sampling was conducted in irrigation canals of the Boulder River, fish loss in Boulder River irrigation ditches was likely negatively impacting the trout fishery. Fish screening of canals was not pursued due to high project costs and the potential to modify system as proposed in this grant application. Two anecdotal observations by FWP staff provide a general indication of the scale of fish entrainment at Boulder diversions:
<b>Fish Rescue at Shaw Ditch and Eastside Ditch – August 8, 2003</b>
Both headgates were closed for haying operations, and FWP was notified to observe fish stranding. Shaw Diversion sampling found 31 Brown Trout and 2 Rainbow Trout in the concrete headgate basin immediately below the diversion. All but 6 Brown Trout were Age 0 fish averaging about 3.5 inches in length. Eastside Diversion sampling found 69 Brown Trout and 0 Rainbow Trout in a 400 ft reach downstream of the headgate. All but 3 Brown Trout were Age 0 fish during the short sampling reach.
<b>Fish Rescue at Shaw Ditch – October 3, 2007</b>
The headgate was closed on 10/2/2007 and all fish were stranded below the headgate in remaining pools. Backpack electrofishing for approximately 0.2 miles below the headgate was conducted on 10/3/07. Trout recovery efforts salvaged 157 Brown Trout and 3 Rainbow Trout during 3073 seconds of electrofishing. Most Brown Trout captured (N=132) were Age 0 and 1 (less than 6-inches in length). Small suckers, longnose dace, redbreast shiner, and sculpin were also sampled by not included in the tabulated data.

May 9, 2022

Montana Trout Unlimited  
PO Box 7186  
Missoula, MT. 59827

Future Fisheries Improvement Program  
FWP Fisheries Division  
P.O. Box 200701  
Helena, MT 59620

**Re: North Boulder Fish Passage and Connectivity Project**

Dear FWP, Future Fisheries Review Panel:

Montana Trout Unlimited (MTU), on behalf of more than 4,500 statewide members, including local membership in the Chuck Robbins and George Grant Chapters of Trout Unlimited, supports Montana Fish, Wildlife & Parks (FWP) Future Fisheries Improvement Program application. We ask that the Future Fisheries panel fully fund the request of \$41,000. A diverse group of partners including, the Natural Resource Conservation Service, MTU, FWP, and two private landowners and water users, have come together to provide expertise and funding to complete this win-win project.

The North Boulder Fish Passage and Connectivity Project will have a profound positive effect on the Boulder River fishery by removing a fish passage barrier, the Shaw Diversion dam. This project will proactively retire an antiquated and failing irrigation system. Improving the irrigation system and increasing irrigation efficiency, the water-user, Lenny Huckaba expects better crop yields using less water. The result will be an increase in the late-season base flow of relatively cold Boulder River water two miles upstream of the Jefferson River near Cardwell. MTU understands the benefits of working with traditional agricultural users for the benefit of a public resource. The landowner, Barrick-Golden Sunlight Mine, provides public access to this reach of the Boulder River known as Candlestick Ranch.

FWP's fishery management depends on sound science. This is a data-driven project. To date, data collection has included fish population surveys, stream temperature and discharge, irrigation withdrawals, and redd counts upstream of the fish passage barrier. Through the fish population survey, it was determined that the Shaw Diversion dam is a full passage barrier for Rocky Mountain Whitefish and other native forage fish. There is a fish ladder at the dam, but it does not appear to pass most species.

MTU's mission is to conserve, protect, and restore Montana's world-class fisheries and their watersheds. We have been a steadfast partner in this project since its inception. We raised money for a conceptual design alternatives report, delivered to project partners in December 2021. We have adequate funding to complete the final design in 2022. We expect to advertise a request for proposals in early summer. We applied for ARPA Irrigation Infrastructure funding in January. This project ranked #5 out of 34 and is recommended for full funding. We anticipate the final funding decision in June. We have and will continue to raise awareness for win-win projects through our quarterly newsletter, *Trout Line*, with a distribution of over 5,000 households in Montana, online, and elsewhere.

Like many Montanans, our members prize the opportunity to pursue wild fish in high-quality habitat. That is why MTU advocates for, plans, and implements stream restoration with partners to improve aquatic ecosystems. This is a unique opportunity to support a historically significant project that will connect hundreds of miles of mainstem Boulder River and its tributaries to the Jefferson River.

Thank you for considering our input on this project. Feel free to contact us with any questions regarding our comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Edgington". The signature is fluid and cursive, with the first name "Chris" and last name "Edgington" clearly distinguishable.

Chris Edgington  
Jefferson Watershed Project Manager  
Montana Trout Unlimited  
[chris@montanatu.org](mailto:chris@montanatu.org)



**Golden Sunlight**  
453 Mountain Highway 2 East  
Whitehall, MT 59759

[www.barrick.com](http://www.barrick.com)

May 11, 2022

**Via Email**

MTFWP  
Attn: Michelle McGree  
1420 E. Sixth Street  
Helena, MT 59620  
[MMcGree@mt.gov](mailto:MMcGree@mt.gov)

***Re: FWP Future Fisheries Improvement Program Grant Application***

Dear Michelle:

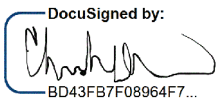
Please accept this letter of support of FWP Future Fisheries Improvement Program's (FFIP) 2022 grant application in connection with the North Boulder Fish Passage and Connectivity Project. The FFIP, in tandem with related projects, will restore the passage of all fish species and aquatic life between the Jefferson River and North Boulder River by removing open ditch irrigation diversions and providing an alternative irrigation system.

The Jefferson River and its tributaries in Southwest Montana provide high-quality cold-water habitat for fish and wildlife and essential irrigation water. FWP has long been attempting to connect a spawning population of brown trout from the Jefferson River to the Cold Springs spawning habitat located upstream of the irrigation diversions and have implemented various strategies help accomplish this goal. The removal of the Shaw Diversion, in conjunction with the related projects, would restore natural stream function at the diversion removal site ensuring seasonal upstream movements.

Golden Sunlight Mine supports FWP Future Fisheries' continued effort to engage with multiple stakeholders and increase awareness about the need to improve aquatic habitat and reclaim the Shaw Diversion backwater and wetland area.

Thank you for the opportunity to comment in support of the FFIP proposal.

Charles Buus  
Manager, Golden Sunlight Mine

DocuSigned by:  
  
BD43FB7F08964F7...